WHAT IS CLAIMED:

1. Isolated DNA encoding a human N-methyl-D-aspartate (NMDA) receptor subunit.

2. DNA according to claim 1 wherein said NMDA receptor subunit is an NMDAR1 subunit.

3. DNA according to Claim 2 wherein the nucleotides of said DNA encode the amino acid sequence of Sequence ID No. 2, 2B, 2E, 2F, 2G, 2H, 2I, 2J, 2K, 2L, 2M, 2N, or 2P.

4. DNA according to claim 2 wherein the nucleotides of said DNA encode the amino acid sequence of Sequence ID No. 2, 2B, 2E, 2F, 2G, 2H or 2I.

5. DNA according to claim 2 wherein the nucleotides of said DNA hybridize under high stringency conditions to any one of the sequences of Sequence ID No. 1, 1A, 1B, 1C, 1D, 1E, 1F, 1G, 1H, 1I, 1J, 1K, 1L, 1M, 1N, or 1P.

6. DNA according to claim 2 wherein the nucleotides of said DNA hybridize under high stringency conditions to the sequence of Sequence ID No. 1, 1B, 1F, 1G, 1H, 1I or 1P.

7. DNA according to claim 2 wherein the nucleotides of said DNA have substantially the same nucleotide sequence as any one of Sequence ID No. 1, 1B, 1E, 1F, 1G, 1H, 1I, 1J, 1K, 1L, 1M, 1N, or 1P.

8. DNA according to claim 2 wherein the nucleotides of said DNA have substantially the same nucleotide sequence as Sequence ID No. 1, 1B, 1E, 1F, 1G, 1H, 1I or 1P.

9. DNA according to claim 1 wherein said NMDA receptor subunit is an NMDAR2 subunit.

10. DNA according to Claim 9 wherein the nucleotides of said DNA encode the amino acid sequence of Sequence ID No. 6, 6E, 6F, 6G, 6H or 6I.

11. DNA according to claim 9 wherein the nucleotides of said DNA hybridize under high stringency conditions to any one of the sequences of Sequence ID No. 5, 5A, 5B, 5C, 5D, 5E, 5F, 5G, 5H, or 5I.

12. DNA according to claim 9 wherein the nucleotides of said DNA have substantially the same nucleotide sequence as any one of the sequences of Sequence ID No. 5, 5E, 5F, 5G, 5H or 5I.

13. DNA according to claim 9 wherein the nucleotides of said DNA encode the amino acid sequence of Sequence ID No. 14.

14. DNA according to claim 9 wherein the nucleotides of said DNA hybridize under high stringency conditions to the sequence of Sequence ID No. 13.

15. DNA according to claim 9 wherein the nucleotides of said DNA have substantially the same nucleotide sequence as Sequence ID No. 13.

16. DNA according to claim 9 wherein the nucleotides of said DNA encode the amino acid sequence of Sequence ID No. 16.

17. DNA according to claim 9 wherein the nucleotides of said DNA hybridize under high stringency conditions to the sequence of Sequence ID No. 15.

18. DNA according to claim 9 wherein the nucleotides of said DNA have substantially the same nucleotide sequence as Sequence ID No. 15.

19. DNA according to Claim 9 wherein the nucleotides of said DNA encode the amino acid sequence of Sequence ID No. 11, or the amino acid sequence of the NMDAR2A-encoding portion of clone NMDA57 (ATCC accession no. 75442).

20. DNA according to Claim 19 wherein the nucleotides of said DNA hybridize under high stringency conditions to Sequence ID No. 10 of the NMDAR2A-encoding portion of clone NMDA57 (ATCC accession no. 75442).

21. DNA according to claim 19 wherein the nucleotides of said DNA have substantially the same nucleotide sequence as Sequence ID No. 10 or the NMDAR2A-encoding portion of clone NMDA57 (ATCC accession no. 75442).

22. Isolated protein encoded by the DNA of Claim 1.

23. Nucleic acid probes comprising at least 14 contiguous bases of the DNA according to Claim 1.

24. solated mRNA complementary to DNA according to Claim 1.

25. Eukaryotic cells containing DNA according to claim 1.

26. Eukaryotic cells expressing DNA of claim 1.

27. Cells according to claim 26 that express functional heterologous NMDA receptors.

28. Amphibian oocytes expressing the mRNA of Claim 24.

29. A method for identifying DNA encoding human N-methyl-D-aspartate (NMDA) receptor protein subunit(s), said method comprising:

contacting human DNA with a probe according to Claim 23, wherein said contacting is carried out under high stringency hybridization conditions, and

identifying DNA(s) which hybridize to said probe.

30. A method for identifying compounds which bind to human N-methyl-D-aspartate (NMDA) receptors, said method comprising employing cells according to Claim 27 in a competitive binding assay.

31. A bioassay for identifying compounds which modulate the activity of human NMDA receptors, said bioassay comprising:

(a) exposing cells according to claim 27 to at least one compound whose ability to modulate the ion channel activity of said receptors is sought to be determined; and thereafter

(b) monitoring said cells for changes in ion channel activity.

32. A method for modulating the ion channel activity of human N-methyl-D-aspartate (NMDA) receptors, said method comprising:

contacting said receptor(s) with an effective amount of at least one compound identified by the bioassay of Claim 31.

33. Agonists or antagonist for human NMDA receptor(s) identified by the method of claim 31.

34. An antibody generated against the protein of Claim 22 or portions thereof unique to human NMDAR subunits.

35. An antibody according to Claim 34, wherein said antibody is a monoclonal antibody.

36. A method for modulating the ion channel activity of human N-methyl-D-aspartate (NMDA) receptor(s), said method comprising:

contacting said receptor(s) with an effective amount of the antibody of Claim 34.